The effects of religion on development efforts –

evidence from the microfinance industry and a research agenda

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Abstract

This study responds to the need for more empirical knowledge pertaining to the effect of religion on development efforts. We find that Christian Microfinance Institutions (MFIs) have significantly lower funding costs and consistently underperform in terms of financial profit indicators. Contrary to our hypotheses Christian MFIs are as efficient in assuring loan repayment and their average loan sizes are on par with those of their secular peers. When splitting the Christian MFIs into Catholic and Protestant subgroups, we find that the lower financial performance for Catholic MFIs seems to be driven by the lower interest rates that are charged on outstanding loan portfolios whereas the lower financial performance of Protestant MFIs is a result of higher operating costs. In addition, the study provides a new agenda for research pertaining to the effects of religion on development efforts.

Keywords: Religion, performance, efficiency, microfinance, development providers, MFIs

The effects of religion on development efforts: Evidence from the microfinance industry and a research agenda

1. Introduction

Despite repeated claims that religions and religious beliefs represent an important yet neglected factor in development (e.g., Marshall & Keough, 2004; Ter Haar and Ellis, 2006; Thomas, 2005), empirical studies on the effects of religion on development efforts are scarce. Religion may influence the perceptions and behaviors of several parties in the development arena. Regarding the recipients of development efforts, Ter Haar and Ellis (2006) claim that religious beliefs provide moral guidance and encourage people to improve their lives. Religion may also influence providers of development efforts. For example, many international development organizations, such as World Vision and Catholic Relief Services, are Christian organizations. The microfinance industry is no exception. Several Christian organizations, such as Opportunity International and Vision Fund, are actively involved in advancing the microfinance industry. In this paper, we use microfinance institutions (MFIs) as examples of providers of development efforts and determine the differences between Christian and secular MFIs in various dimensions of organizational performance.[1]

MFIs provide poor families and micro-entrepreneurs with banking services, such as loans and saving facilities. The development-enhancing aspect of microfinance has been recognized by the United Nations, which declared 2005 the Year of Microcredit, and by the Norwegian Nobel Committee, which awarded the Peace Prize to microfinance pioneer Mohammad Yunus and Grameen Bank in Bangladesh in 2006. Because Islamic law strictly bans the practice of charging predetermined interest rates on loans or savings, researchers have long been interested in Islamic finance in general and Islamic microfinance in particular (Karim, Tarazi, & Reille, 2008; Kaleem & Ahmed, 2010). However, we are not familiar with any rigorous empirical studies of Christian microfinance.

Although many Western policy elites hold a secular worldview and equate modernization and secularization (Thomas, 2005), many aid and development organizations are based on religious principles and are managed by people who are inspired by religious beliefs. More important, in a purely secular model, the basic values of large groups of poor people are ignored. Increasingly, several parties in the development arena seem to share this concern. A few years ago, the UK government initiated a project known as Faith in Development, a multimillion-pound research consortium. Similarly, the Dutch Ministry of Foreign Affairs instituted the Knowledge Forum on Religion and Development Policy, and the Norwegian government recently launched a dialog initiative about religion and aid. The World Bank has delivered several reports on religion and development issues (e.g., Marshall & Keough, 2004). Clearly, there is no lack of policy interest concerning religion and development; however, empirical research regarding the influence of religion on development is fragmented and still in its infancy.

Donor governments have often been reluctant to channel much public support through faith-based organizations because they fear using public funds for religious purposes. However, since the launch of former President George W. Bush's initiative to fund the social initiatives of faith-based organizations, there has been a sharp increase in public funding for both national and international efforts (Formicola, Segers, & Weber, 2003; Harper, Rao, & Sahu, 2008). The claim is that faith-based organizations can produce important social outcomes (Johnson, 2002).

In addition to being involved in development efforts, faith-based organizations are common in other industries, especially health care, retirement or nursing homes and education. However, whether and how religious affiliation affects operations and organizational performance in these industries remain unclear (Amirkhanyan, Kim, & Lambright, 2009).

In the economic history literature, there is a long-standing debate regarding the role of religion in stimulating economic growth. This debate began with Max Weber's classic work *The Protestant Ethic and*

the Spirit of Capitalism (1930/1958). Weber claimed that the Protestant ethic, which focuses on personal agency and diligence, spurred economic development. Although Weber's thesis has been disputed, the more general idea that certain religious (Christian) attitudes may have positive economic implications continues to be discussed and supported (e.g., Iannaccone, 1998). The extensive debate regarding the historical role of religion in the development of modern capitalism sharply contrasts with the meager attention that has been devoted to religion in current development efforts and research.

There are reasons to expect Christian development organizations to differ from their secular counterparts. According to institutional theory, three major forces cause organizations in a field to be more isomorphic, or similar (DiMaggio & Powell, 1983). First, important actors on whom organizations depend, such as governments or other parties with resources, may impose regulations or policies that lead to isomorphism. However, the microfinance industry is weakly regulated or unregulated in most countries. Second, organizations may mimic popular practices in other organizations, particularly in uncertain conditions. Thus, if MFIs prefer to mimic peers with whom they share the same ideology and faith, it may be argued that Christian MFIs will be more similar. Third, according to DiMaggio and Powell (1983), isomorphism becomes normatively ordained when credentialing institutions or professional networks establish the conditions of membership and work methods. As for the microfinance industry, there are several standardization initiatives, such as the CGAP policy recommendations, the SMART campaign, the SEEP initiatives, the rating bureaus, and the Microcredit Summit. Therefore, in the future, MFIs may become more similar. However, for now, we still believe that there is considerable freedom for each MFI to define its policies and practices according to its own ideology and objectives. Moreover, isomorphism within the group of Christian MFIs can be expected because they often belong to the same professional networks, such as Opportunity International and Vision Fund.

In sum, the forces that typically cause organizations in a field to become similar are still not very strong in the international microfinance industry. In addition, Christian and secular MFIs are partly influenced by different isomorphic factors because they normally have different owners, often have different donors or funders and depend on public funding to different degrees (secular MFIs typically are more dependent on public funding). Therefore, we expect substantial differences in the practices and potentially in the performances of Christian and secular MFIs.

Preliminary evidence for this position is found in a study by Harper *et al.* (2008). In investigating a sample of 11 secular and 11 Christian international development organizations in the UK and the US, Harper *et al.* (2008) report that secular NGOs in both the UK and the US receive a higher portion of their budgets from public donors. Additionally, salaries for managers were higher in secular NGOs. No differences were found for fund-raising costs and average staff costs. However, more general studies are lacking, and the role and influence of religious organizational identity remain largely unexplored.

In this study, we compare the performance of Christian-initiated MFIs with secular MFIs in terms of several financial performance indicators and some proxies for social outcomes. To this end, we develop hypotheses that explore performance differences between Christian MFIs and secular MFIs. We find that Christian MFIs have significantly lower funding costs and consistently underperform in terms of financial profit indicators. Contrary to our hypotheses Christian MFIs are as efficient in assuring loan repayment and their average loan sizes are on par with those of their secular peers. When splitting the Christian MFIs into Catholic and Protestant subgroups, we find that the lower financial performance for Catholic MFIs seems to be driven by the lower interest rates that are charged on outstanding loan portfolios whereas the lower financial performance of Protestant MFIs is a result of higher operating costs.

In the following sections, we describe the microfinance industry and the involvement of Christian actors. Next, we develop hypotheses regarding the ways in which Christian MFIs may perform differently from

secular MFIs. We describe the methods for the empirical comparisons, report the results of the analyses and provide some additional information with which to compare performance differences between Protestant and Catholic MFIs. Finally, we discuss the implications of the findings and suggest an agenda for future research regarding the role of religion in development.

2. Microfinance and Christian actors

The microfinance industry is vibrant. More than 3,000 actors provide their data to the Microcredit Summit, and these actors report serving more than 150 million credit clients (Daley-Harris, 2009). The diversity of ownership in the industry is substantial. Member-based cooperatives, foundations, government banks, private persons, shareholder entities, listed commercial banks and even multibillion dollar international banks constitute a colorful and rapidly growing industry. The objectives of such organizations range from female empowerment to high profit. Among these organizations, several religion-based actors are involved, including Hindu, Islamic and especially Christian organizations (Harper *et al.,* 2008).

The often low financial sustainability, combined with the high interest rates on microfinance loans (our sample has an average portfolio yield of 39%), indicates a need to address cost structures in the industry (*Rosenberg*, Gonzalez, & Narain, 2009). Likewise, in a recent paper, Mersland and Strøm (2010) illustrate the importance of cost reductions in increasing the penetration of services to the poor populations. In this regard, it is important to identify efficiency drivers in the industry. Mersland (2009) theorizes that an MFI's ownership type may influence its performance, but Mersland and Strøm (2008) cannot confirm performance differences between MFIs incorporated as shareholder companies and MFIs categorized as non-governmental organizations. However, whether the origins of religious organizations affect their

performance has thus far not been studied. As illustrated by Knox, Blankmeyer, and Stutzman (2006) in a study on the nursing industry in Texas, it is important to explore beyond the legal type of ownership to better understand how religious affiliation per se may influence organizational efficiency.

In fact, many MFIs have Christian origins. For example, the international network of Opportunity International currently includes 43 MFIs in 26 countries, and the Vision Fund of World Vision operates 42 MFIs in 42 countries. Other important international Christian microfinance actors include Catholic Relief Services, Mennonite Economic Development Associates (MEDA), the Norwegian Mission Alliance, World Relief, Cordaid, ICCO, Oikocredit and the Stromme Foundation. Although Mohammad Yunus is celebrated for conceiving modern microfinance in the Bangladeshi village of Jobra in 1976, several years beforehand, David Bussau and Al Whittaker, motivated by their Christian faith, started issuing small loans to generate jobs. Their initiative later became known as Opportunity International. Similarly, MEDA in Paraguay preceded Mr. Yunus.

In a historical perspective it should not be surprising that Christian organizations are actively involved in traditional aid and development efforts and in enterprising and banking initiatives. For example, in Europe, Protestant pastors and Christian businesspeople were at the forefront in the savings bank movement that spread throughout the Europe 150 to 200 years ago (Horne, 1947). In the UK, the Anglican Reverend Henry Duncan became known as the "father of savings banks." Likewise, Catholic priests were and continue to be important figures in many savings and credit cooperatives, which represent a microfinance movement that has persisted for more than 150 years (Teck, 1968).

Thus far, the existence and effect of religious actors in modern microfinance has not been addressed by rigorous research. Bussau and Mask (2003) outline the theological reasons why Christian actors should care about microfinance and entrepreneurship, and Harper *et al.* (2008) relate the stories of three

religious MFIs: one Muslim, one Christian and one Hindu. To the best of our knowledge, other, more academic sources are not available.

3. Hypotheses

In this section, we develop hypotheses regarding performance differences between Christian MFIs and secular MFIs. MFIs pursue two bottom lines, outreach to poor customers and financial returns (Morduch, 1999), but there is a trade-off between these two objectives (Hermes, Lensink, & Meesters, 2011; Mersland & Strøm, 2010). We therefore explore the effect of religion on both social outcomes and financial performance.

3.1. Social performance

Although most microfinance actors agree that both financial and social objectives are important, there is no consensus as to how social performance should be measured (Hashemi, 2007). Academic researchers are therefore struggling to identify the appropriate variables to represent social performance. The average loan size and the targeting of female clients are the most widely used social outreach indicators in microfinance research (Cull et al. 2007, Mersland & Strøm, 2010) and are the variables used in this paper to represent social performance.

Outreach to poor clients

Concern for the poor is a central biblical virtue. In fact, working is partly motivated by the opportunity to assist those in need: *"Let the thief no longer steal, but rather let him labor, doing honest work with his hands, so that he may be able to give to those in need" (Ephesians 4.28).* Serving the poor is a major concern in the teachings of Jesus. For instance, in his response to the young man who claims to have

lived a good life within the norms and rules of The Law, Jesus replies as follows (Matthew 19.21): *"If you would be perfect, go, sell what you possess and give to the poor, and you will have treasure in heaven; and come, follow me."*

In line with the biblical imperative to serve the poor, Bussau and Mask argue that Christian MFIs should be at the forefront of servicing the poorest customers (Bussau & Mask, 2003). Average loan size is the most widely used indicator to indicate whether an MFI reaches poor customers. For MFIs offering some big loans alongside many small loans, their average outstanding loan balances do not fully reflect their social profiles, and the average loan does not necessarily reflect the clients' poverty level. Nevertheless, the average outstanding loan balance is constantly tracked by MFI boards, investors and other stakeholders because it gives a rough measure of the MFI's poverty focus. We expect the following hypothesis to hold:

Hypothesis 1 a): *Christian MFIs have lower average loan balances compared with secular MFIs.*

Targeting female clients

Microfinance and women have always been intrinsically linked. Since the experimental schemes in Asia and Latin America in the 1970s, microfinance has primarily targeted women (Aghion & Morduch, 2005). Women are more likely than men to repay their loans (D'Espallier, Guerin, & Mersland, 2011). In addition, by enabling women to develop or strengthen income-generating activities, microfinance is likely to increase their monetary income, their control over their income and their bargaining power within the household. Among some Christian believers, especially in developing countries, such female empowerment can be contrary to Christian doctrine. Nevertheless, because several studies confirm that a dollar loaned to a woman has a greater development effect than a dollar loaned to a man (World-Bank,

2007) and because women tend to be poorer than men, we expect that the poverty orientation of Christian MFIs should incline them to focus on women.

As with the average loan, the percentage of female clients is a proxy for social performance that is in dispute. Overreliance on serving women may actually cause harm to women. For example, women may be taking out loans for their husbands, or they may end up being in charge of the families' monetary income, adding one more duty to a list that is often already unbalanced because of their sex. However, because servicing loans for women has been and continues to be at the forefront of the microfinance industry (see, for example, www.microcreditsummit.org), it is relevant to test whether religious affiliation affects the MFI's outreach to women. The following hypothesis is thus proposed:

Hypothesis 1 b): *Christian MFIs have relatively more female clients compared with secular MFIs.*

3.2. Financial performance

Four underlying variables constitute the majority of an MFI's financial profits: *operational income, financial costs, operational costs, and loan losses*. To better understand the financial performance differences between Christian and secular MFIs, we develop hypotheses for each variable.

Maximizing operational income

Operational income consists of the loan portfolio multiplied by the effective interest rate. Most MFIs still operate in markets in which they have some oligopoly power and can decide their price levels to a certain extent. In some markets, such as Ecuador, there are interest rate caps established by the government, but within those caps, MFIs determine the prices of their services. Harper *et al.* (2008) argue that the practice of charging sustainable interest rates represents a stark dilemma for Christian

MFIs and that it is the antithesis of the long-term charity inherent in faith-based organizations. World Relief (1996) and Burbank (undated) indicate that Christian MFIs ethically can charge interest rates, but not at usury levels. Thus, we would expect Christian MFIs to be more inclined to "help" their clients by offering interest rates that are lower than those offered by secular MFIs. We use an MFI's portfolio yield to represent an MFI's interest rate and hypothesize as follows:

Hypothesis 2 a): *Christian MFIs have a lower portfolio yield compared with secular MFIs.*

Minimizing financial costs

A main difference between microfinance and regular banking is that finance costs are relatively less important than operational costs in microfinance. This difference occurs because operational costs are high and subsidized funding is available. Nevertheless, the median cost of borrowed funds in our data set is approximately 7%, and liability management is becoming more important in the industry. The likelihood of a Christian MFI hiring management with the "right" theology but not necessarily the best management skills may have a negative influence on the financial costs of MFIs. However, the microfinance industry is international in scope (Mersland, Randøy & Strøm, 2011), and international lenders invest approximately US $10 billion into MFIs (Reille, Glisovic-Mezieres, & Berthouzoz, 2009). Several international lenders, including one of the world's largest, Oikocredit, have a Christian identity. Moreover, several international microfinance networks and other types of support organizations are Christian and provide financial support to MFIs. Although most of the international Christian lenders and support organizations do not explicitly favor Christian MFIs, we would still expect that better access to international networks and lenders and sharing a common faith would result in lower financial costs for Christian MFIs. We thus propose the following hypothesis:

Hypothesis 2 b): *Christian MFIs have relatively lower financial costs compared with secular MFIs.*

Minimizing operational costs

In our data set, the median operational cost relative to the loan portfolio is 23%, compared with the median finance cost of 7%. The small loans and related frequent, small transaction values in microfinance represent a major driver of high cost levels, but it is important for the industry to identify cost drivers to improve future efficiency levels in the industry (Mersland & Strøm, 2010). From a theoretical standpoint, operational efficiency is probably the most interesting variable in an analysis of the economic influence of religion. This topic also has the most developed academic literature pertaining to the economic influence of religion. The strongest empirical cases showing a positive efficiency influence of religion have been offered in psychological research (mostly American and Western European) regarding the effects of Christian belief on individual behavior and social outcomes. McCullough and Willoughby (2009) present a comprehensive and critical review of this literature. They conclude that some types of religious beliefs, behavior, and cognition foster self-regulation and self-control, which in turn have positive implications in terms of stronger task diligence and persistence and a better capacity to change behavior according to the feelings and wishes of other people. In a principal-agent model, self-control should reduce agency costs and have a positive effect on organizational efficiency.

In addition to self-control and self-regulation effects, religion may stimulate work motivation by sanctifying work goals (Emmons, 1999). A series of studies shows that when people think of their work as a divine calling, they find their work more rewarding and spend more time on work (Wrzesniewski, McCauley, Rozin, & Schwarz, 1997), they are more committed to work goals, and they are among the strongest believers in success at work (Emmons, Cheung, &Therani, 1998; Mahoney *et al*., 2005).

Based on the assumption that Christian MFIs tend to hire staff and management with Christian beliefs, as argued by Bussau and Mask (2003), the literature review above indicates that Christian MFIs should be more operationally efficient compared with secular MFIs.

Although psychological research suggests that there could be positive economic implications of Christian beliefs, there are also reasons to expect the opposite. First, religious leaders and workers in MFIs may pursue work goals that are partly opposed to the goals of operational efficiency. Research indicates that when work goals are sanctified, the result is stronger commitment, persistence, and perceptions of self-efficacy (McCullough &Willoughby, 2009). However, if individual goals are not related to organizational performance, the bottom-line effect of sanctified goals could even be negative. For instance, religious leaders and employees may develop goals that relate to workplace climate, cooperation, and ethics rather than organizational efficiency goals. When individual non-performance goals are dominant, religious MFIs may develop cultures that are inefficient and uncompetitive. As evidence, Wooten, Coker, and Elmore (2003) observed that religious NGOs were too focused on their religious missions at the expense of financial control. Likewise, some authors argue that Christian MFIs should have a triple bottom line—financial results, social results and spiritual results—and that, for example, high client/staff efficiency ratios are incompatible with the achievement of spiritual results (Bussau & Mask, 2003).

A similar type of goal bias could be observed with the boards of religious organizations. Board members who represent religious organizations may focus primarily on the theological profiles of the organizations and the spiritual leadership of leader candidates. Thus, the leaders of such organizations may have the "right theology" but may have subpar management skills. Thus, we present two rival hypotheses regarding the relative efficiency of Christian MFIs:

Hypothesis 2 c-I): *Christian MFIs have higher operational efficiency levels compared with secular MFIs.*

Hypothesis 2 c-II): *Christian MFIs have lower operational efficiency levels compared with secular MFIs.*

Minimizing loan losses

Modern microfinance was intended as a response to the high default rates in subsidized rural credit from the 1950s to the 1980s (Hulme & Mosley, 1996). Thus, the low default rates in microfinance are one of the industry's main achievements. However, not all MFIs report low default rates. In our data set, the default rates, which are measured as the proportion of a portfolio that is more than 30 days in arrears (PaR30), range from 0 to 97%. Therefore, not all MFIs enjoy low default rates, and this variance probably indicates that keeping defaults down is to a large extent a managerial issue. Harper *et al.* (2008) indicate that financial sustainability is the antithesis of forgiveness, a classic Christian virtue. Christian MFIs should thus be more inclined to "help" their clients and be more lenient in enforcing loan repayment. Likewise, the effect of sanctified workplace goals as outlined above, such as organizational climates and ethics, may also have a negative influence on loan loss efficiency. Furthermore, Christian MFIs may not be willing to practice heavy-handed enforcement methods that they consider unethical. The following hypothesis is proposed:

Hypothesis 2 d): *Christian MFIs have lower loan loss efficiency compared with secular MFIs.*

Bottom-line financial performance

As outlined above, the influence of having a Christian origin may have different effects on the four underlying drivers of the MFI's bottom-line financial profits. We thus present two rival hypotheses regarding bottom-line financial performance:

Hypothesis 2 e-I): *Christian MFIs have better bottom-line performance compared with secular MFIs.*

Hypothesis 2 e-II): *Christian MFIs have lower bottom-line performance compared with secular MFIs.*

4. Data and methodology

Data pertaining to 405 MFIs operating in 73 countries worldwide have been extracted from detailed assessment reports gathered by specialized rating agencies that are supported by CGAP's Rating Fund (www.ratingfund2.org). Ratings were performed from 2001 to 2010, and for each rating, an average of four years of data were obtained[2]. For this study, the source of information is vitally important because the reports contain detailed information regarding the background of the MFIs and allow us to identify whether an MFI has a Christian origin.[3] In Table 1, we provide a detailed description of and summary statistics for the main variables used throughout this study. This table should provide a clear overview of the sample that is investigated.

As shown in the table, the median MFI in our sample has 2.67 million U.S. dollars in total assets and operates a total loan portfolio of 1.97 million dollars. The median MFI is eight years old and has an outstanding loan balance per client of 386 US dollars; these figures indicate the newness of the industry and the *micro* aspect of microfinance. Nearly three-quarters of the clients in the median MFI are women, demonstrating the strong female focus in the industry. Twenty-eight percent of the MFIs are regulated by banking authorities; a third of the MFIs are incorporated as banks or non-bank financial institutions; and, most important for this study, one in six MFIs (17%) have Christian origins. Overall, financial performance is not particularly high, with a median ROA of 2.5%, operational self-sufficiency (OSS) of 1.11 and financial self-sufficiency (FSS) of 0.96.[4] The FSS figure suggests that a substantial number of MFIs struggle to gain financial independence and continue to rely on donors and subsidies. The drivers of the bottom-line profit indicate that the median yield is 34%, the cost of borrowed funds is 7%, the operational costs are 23% and the portfolios at risk are 3%.

The representativeness of the sample is always an important issue. Although the rating data are considered among the most representative data that are available for studying the microfinance industry, no data set is perfectly representative of the microfinance field. For instance, our set contains relatively few of the largest MFIs and does not cover the virtually infinite number of small savings and credit cooperatives active in the industry. The former category is rated by agencies that include Moody's and Standard and Poor's whereas the latter category is not rated at all. Overall, we believe that our database provides a more representative image of the microfinance industry compared with other available data sets, such as Mixmarket (www.mixmarket.org), which has a well-known large firm bias.

Table 1 around here

We first examine univariate t-tests that analyze the differences between the two groups in the different hypothesized performance variables. Next, we regress the different performance indicators on a set of control variables (firm-specific and contextual controls) and the dummy for Christian compared with secular MFIs using a random-effects (RE) model. RE models have several important benefits that have increased their popularity in earlier performance studies. First, RE models account for all unobserved, institution-specific variation by including a term μ_i that reduces any bias from potentially omitted variables. Second, RE models are better suited to handle the time-invariant nature of some of the covariates than, for instance, fixed-effects (FE) models, which eliminate time-invariant variables by first-differencing.

In the regressions, we include a set of MFI-specific controls that have been used in earlier performance studies to relate the variables of size and age, the dummy for regulation and the dummy for ownership. In addition, we employ a set of country-specific controls that account for the possibility that

performance may be tied to the specific economic context in which an MFI is active. Finally, we include both time and regional dummies to account for time-specific and regional differences in overall macroeconomic conditions that may affect performance. The standard errors used for computing significance levels are corrected for heteroskedasticity and autocorrelation. In addition, standard errors are clustered at the MFI level to account for MFI-level heterogeneity.

5. Analysis and results

Table 2 compares the performance of Christian and secular MFIs using univariate t-statistics (mean values) and χ^2-statistics (median values). As shown in the table, Christian and secular MFIs differ on several variables. In line with our hypotheses, Christian MFIs have a significantly lower portfolio yield and a lower cost of funds compared with their secular counterparts. The operational costs and portfolios at risk are identical for the two types of MFIs. The lower funding costs do not balance the lower portfolio yield; thus, the bottom-line financial performance of Christian MFIs is lower (measured with ROA and FSS) than that of secular MFIs. The clear difference between OSS and FSS values indicates that Christian MFIs are more dependent on support from donors. Contrary to our hypothesis, Christian MFIs serve relatively fewer female clients, whereas the average loan size in Christian MFIs does not significantly differ from that of secular MFIs.

Table 2 around here

We now turn to multivariate statistics and begin with Table 3, in which social performance differences are measured using the average loan size and the percentage of female clients as proxies for social performance. As shown in the table, the findings from the univariate statistics are upheld. Christian MFIs

serve significantly fewer female clients whereas the average loan size is not significantly different, although the sign is negative. These findings, especially the finding related to female clients, should be interpreted with caution. After all, nearly two-thirds of the clients are women in Christian MFIs. Considering the risk of feminizing families' debts, it might well be that the share of female clients in Christian MFIs are on healthier levels than in secular MFIs.

Table 3 around here

In Table 4, we report the RE-performance regressions, in which the different financial performance drivers (portfolio yield, cost of funds, operational costs, and portfolios at risk) are regressed against the Christian versus secular dummy and a set of MFI-specific and country-specific controls. As shown in this table, the R^2 and the Wald statistics yield satisfactory results. Like the results for the social performance regressions, the results from the univariate statistics are also upheld for the RE-performance regressions. Christian MFIs charge lower interest rates (proxied with portfolio yield) and have a lower cost of funds compared with secular MFIs. No significant differences can be found for operational costs or portfolios at risk; therefore, on average, Christian MFIs are equal to secular MFIs in terms of operational efficiency and in ensuring that their clients repay their loans.

With the firm-specific control variables, we observe that older and regulated MFIs reduce their interest rates whereas for-profit MFIs charge higher rates on their loans. The control variables yield few other interesting results, except that larger MFIs are associated with lower funding costs, and older MFIs have more portfolios at risk. This latter result probably is due to the greater knowledge of experienced MFIs regarding how to handle higher levels of defaults. The Human Development Index indicates that interest rates, operational costs and funding costs are higher in more developed countries. The higher funding

costs may result from the greater difficulty of MFIs operating in more developed countries in obtaining subsidized international funding. It is not surprising that the other country variables are not significant because most of the heterogeneity due to country-level differences is already eliminated by the regional dummies and the random effects. Additionally, the conversion of all monetary variables into US dollars further reduces country heterogeneity.

Table 4 around here

How does the Christian influence on performance drivers influence the bottom-line financial performance of MFIs? Table 5 reports results for ROA, OSS and FSS. As indicated in the table, Christian MFIs show significantly lower bottom-line financial performance compared with secular MFIs, regardless of which bottom-line performance variable is considered. The lower cost of funds reported in Table 4 does not balance the lower portfolio yield. In unreported analyses, we have also calculated the percentage of MFIs that break even, and we find that although 81.5% of the secular MFIs break even, only 72% of the Christian MFIs have a positive bottom line.

Table 5 around here

6. Additional analyses

Kock, Dreher, Nunnenkamp, and Thiele (2009) report that the aid provided by international NGOs is clustered and that countries of operation are selected on the basis of common religious traits between the donor and recipient organizations. If this observation is accurate, then Christian MFIs are probably concentrated in specific countries and regions, and this concentration may influence the results reported above. To control for this influence, we have rerun the regressions (unreported) on a sub-sample that includes only those secular MFIs that operate in countries where Christian MFIs are represented. The

results, both in terms of signs and relative effects, are largely similar to the results presented in Tables 3, 4 and 5, indicating that our results are robust.

The Christian church is divided into several branches or denominations. The two largest branches in terms of membership are the Roman Catholic Church and Protestant churches. According to the German social scientist Max Weber, in the nineteenth century, a business philosophy emerged within Protestantism that promoted the rise of modern capitalism. Whereas Catholicism encouraged respect for traditions and authority, Protestant doctrines focused on individual responsibility, diligence and personal agency. Several aspects of Weber's historical analyses are debated, but leading historians seem to support the notion that Protestantism produced a moral character conducive to economic performance. For instance, in a comment referring to the Weber thesis, Harvard's David Landes (1998, p. 177) concludes as follows:

> *The heart of the matter lay indeed in the making of a new kind of man – rational, ordered, diligent, productive. These virtues, while not new, were hardly commonplace. Protestantism generalized them among its adherents, who judged one another by conforming to these standards.*

The question is whether such personal characteristics continue to be more prevalent among Protestants 200 years after the Industrial Revolution. A recent cross-national study of the social and institutional determinants of entrepreneurial activity suggests that some differences continue to exist. The authors observe a negative effect of hierarchical religions (e.g., Roman Catholic and Islam) compared with non-hierarchical religions (e.g., Protestantism) on entrepreneurial activity at the national level (Fogel, Hawk, & Morck, 2006). However, our knowledge of such differences at the organizational level is minimal.

To explore the potential differences between Protestant and Catholic MFIs, we divide the sample and run separate regressions for each of the two groups[5]; see Table 6. The results are interesting, and they differ from our expectations based on the historical debate. First, we observe that the effects of Christian identity on portfolio yield observed in previous analyses do not apply to Protestant MFIs. The lower portfolio yield reported in Table 4 is produced entirely by Catholic MFIs. We find that both Protestant and Catholic MFIs have lower funding costs than secular MFIs. However, unlike Catholic MFIs, Protestant MFIs do not translate lower funding costs into lower interest rates. Instead, Protestant providers incur higher operational costs. [6]

Some may argue that lower efficiency levels in Protestant MFIs are the result of better and more personalized client attention and mentoring. We have tested for this hypothesis and actually find the opposite (unreported). Both Catholic and Protestant MFIs serve more clients per staff member than secular MFIs. The inefficiencies found in Protestant MFIs must stem from other sources and should be researched further.

The Catholic/Protestant split sample regressions for the social outcomes and bottom-line financial performance are reported in Table 7. We observe that the lower degree of focus on female clients is prevalent in both types of MFIs and that neither Catholic nor Protestant MFIs serve significantly poorer clients compared with secular MFIs. Likewise, neither of the two types of Christian MFIs show bottom-line financial performance that is similar to that of secular MFIs. In unreported analyses, we find that although only 64.5% of Catholic MFIs break even, 75.6% of Protestant providers manage to remain financially afloat. Therefore, Protestant MFIs seem to care more about their long-term survival than Catholic MFIs.

Tables 6 and 7 around here

7. Conclusions, policy lessons and a research agenda

7.1. Summary, conclusions and limitations

This study answers recent calls for more research regarding the role of religion in development (Ter Haar & Ellis, 2006; Tyndale, 2001). In contrast with most other studies, we focus on providers rather than recipients of development efforts. We use data from the microfinance industry and present the first empirical comparisons of the performance of Christian and secular MFIs. Based on institutional theory, we expected Christian and secular MFIs to be different because they are subjected to different isomorphic factors.

Indeed, our comparisons show that Christian MFIs perform differently from secular MFIs in several dimensions. We find that Christian MFIs have a lower cost of funding, reach relatively fewer female clients, and have lower bottom-line financial performance compared with secular MFIs. Contrary to our hypothesis, Christian MFIs are as effective in enforcing loan repayment as their secular peers. Furthermore, we find important differences within the group of Christian MFIs: the lower bottom-line performance for Catholic MFIs is the result of lower interest rates charged on loans whereas the weak financial performance of Protestant MFIs is the result of higher operational costs. Therefore, although Catholic MFIs pass on the subsidies that they receive to their clients, the advantage of accessing inexpensive funding is consumed internally in Protestant MFIs. These results support the relevance of analyzing and comparing sub-groups and denominations in future studies of religion and development.

Several limitations of our comparison of secular and Christian MFIs should be noted. First, we use a broad range of financial performance measures but only two indicators of social performance: average loan size and percentage of female clients served. Though these are the mostly used social indicators in

microfinance research and management, we admit that they do not necessarily indicate an MFI's social results. Therefore, if possible, future research should include additional indicators to study the social performance of MFIs. Moreover, we recommend researchers to look deeper into the female gender bias in microfinance. In a gender policy perspective, maybe the 63 per cent female borrowers reported in Christian MFIs are as good as or even better than the 73 per cent female borrowers reported in secular MFIs?

Second, we have compared the performance of MFIs with secular and Christian *origins*; we have not examined the operational, market or management differences between the two types of MFIs or differences in visions and goals. Thus, our explanations for the performance differences between the two types of organizations are preliminary and should be tested empirically.

7.2. Policy lessons

Our findings present important insights for Christian development actors and their donors to consider. First, Christian development organizations have an advantage because they often have relatively easy access to international networks and donors. However, this advantage may lead to inefficiencies rather than provide better quality for the recipients of development services. Donors have a particular responsibility in ensuring that their funds reach the target groups. Second, Christian development actors should be concerned about their long-term financial sustainability. Nowadays, when the effect of market based approaches to development problems is being debated (Cooney, K., & Shanks, T. R. W., 2010) and when microfinance in particular is criticized (Bateman, 2010) being dependent on subsidies is a risky strategy for MFIs and their clients. Third, donors and policy makers should remember that statistics report averages. Many efficient Protestant MFIs, such as Diaconia FRIF in Bolivia, are assisting poor clients while ensuring their own sustainability. Forth, as indicated in the hypotheses section, there are

solid reasons for why Christian MFIs could be among the most efficient microfinance providers. We thus recommend managers and donors to ensure that Christian inspiration translates into benefits for clients.

7.3. Toward a research agenda for religion and economic development

In this study, we have compared the characteristics and performance of secular and Christian providers of microfinance. The results confirm that religious identity is relevant and support the calls for more research in this area. However, we have addressed only a limited range of issues and have addressed issues relating to only one party, the providers of financial services. In the following discussion, we develop a broad agenda for future research pertaining to religion and economic development. We divide the presentation into three research arenas: the providers, the recipients, and the interaction between them. We acknowledge that not all the topics mentioned are derived directly from the findings in this paper. However, because this type of research is still in its infancy, we think the following agenda might inform and stimulate future research efforts.

Providers

First, there is a need for more descriptive research regarding the differences between religious and secular provider organizations, including MFIs. Organizations with religious identities other than Christian should be examined. In addition, other characteristics in addition to those addressed in the current study could be relevant. For instance, we welcome comparisons of vision and mission statements, formal strategies, strategic objectives, client management practices, and recruitment policies in organizations with different religious or secular identities. The differences observed in our study could be related to these variables. In addition to descriptions of differences among organizations with different religious identities, we need in-depth case studies of provider organizations with religious identities to discover relationships between religious values and management practices. For example,

our findings show that Protestant MFIs have higher costs than Catholic MFIs. However, we are currently unable to explain this difference. In-depth studies of Protestant and Catholic MFIs could identify the management practices that may explain the higher cost figures and could examine whether and how such practices are related to religious values or principles. A third avenue for research pertaining to the role of religion among providers is corporate governance. One plausible prediction is that Christian organizations have fewer principal-agent problems compared with secular organizations because owners and managers follow the same stewardship logic and subscribe to the same principles of economic activity (see Jegers, 2009).

Recipients

Similar to the research needed in the provider arena, we need descriptive comparisons of recipients with different religious and secular backgrounds. However, other descriptive variables are relevant in the recipient arena. For instance, religious attitudes and values may influence the motivation, managerial practices, and social capital of the recipients of microloans. A recent study of owners of small micro-financed ventures (MFVs) in Nairobi shows that religious attitudes significantly affect the levels of self-efficacy, proactive business planning, and financial performance (Supphellen, Haugland, & Oklevik, 2010). Notably, some religious attitudes had positive effects, and others had no effects or negative effects. To understand the nature and antecedents of these and similar results, we need in-depth case studies of the cultures and practices of recipients.

One important way to support MFVs is business training and education. Because major determinants of learning, such as motivation and persistence, are influenced by religious attitudes and values, the effects of religion on business training should be addressed. Additionally, business ethics represent another important area that is influenced by religion and that necessitates further research. Corruption and other types of ethical misconduct are major threats to economic development (e.g., Gifford, 2009). Our

knowledge of the relationships among various religious values and (un)ethical economic conduct is minimal. Because religion in theory provides people with moral guidance and doctrines, researchers should study differences in ethical conduct across religious groups.

Interaction between providers and recipients

In addition to in-depth studies of the influence of religion in the recipient and provider arenas, we suggest the need for research pertaining to the relationship between the parties. The unit of analysis in this context is the relationship, such as a dyad between an MFI and a client or between an American NGO (provider) and an African partner organization (recipient). To the best of our knowledge, no empirical studies have addressed the influence of religious values and attitudes on the nature and effectiveness of cooperation and communication in such dyads. The religious factor is likely important in the interaction between providers and recipients. It is well-established in the communication and sociological literature that similarity breeds connection. Frequency and openness of interaction is stimulated by homophily, which refers to the degree to which pairs of individuals are similar with respect to certain attributes, such as beliefs, values, status, and education (Rogers & Bhowmik, 1970). Religious beliefs and values are the main dimensions of dyadic similarity judgments. In particular, research shows that religious homophily is an important determinant of the formation of close ties between individuals (McPherson, Smith-Lovin, & Cook, 2001). Given this background, we expect religious homophily to have a profound effect on the nature and quality of cooperation and communication between providers and recipients. Subjective homophily (similarity as perceived by the parties) is more predictive of interpersonal attraction and the frequency of interaction than objective homophily (Rogers & Bhowmik, 1970). Perceived similarity can be influenced and managed. Because religious homophily is both important and possible to manage (by means of recruitment and communication), this factor deserves more attention from both researchers and managers of development organizations. An interesting

question for future research in this area is whether increased knowledge of another party's religious beliefs and values may positively influence the perception of religious homophily. A related issue concerns the possible ways to design means of communication and cooperation that overcome the barriers of low (objective) religious homophily.

Across the three arenas, we suggest that researchers explore beyond crude comparisons of religions. The scant research pertaining to religious factors in development informs us that important differences can be expected between branches or denominations within religions. Moreover, the identification of religious attitudes and values related to economic behavior, which are meaningful across religious groups and denominations, would be useful. Additionally, the proposed agenda raises questions that are relevant to researchers in several disciplines concerned with economic behavior: sociology, anthropology, psychology, communication, management, ethics, and economics. We need a multi-disciplinary approach to understand the implications of religion in economic development efforts. The intended contribution of this agenda is to strengthen the basis for initiating such an approach.

Notes

1. In this article, the term Christian MFI is defined as an MFI that was originally initiated by a Christian organization.

2. The structure of the panel is as follows: for 165 MFIs (40.74%), we have 4 years of data; for 96 MFIs (23.70%), we have 3 years of data; for 48 MFIs (11.85%), we have 5 years of data; for 36 MFIs (8.88%), we have 6 years of data; for 26 MFIs (6.41%), we have 2 years of data; for 18 MFIs (4.44%), we have 1 year of data; for 13 MFIs (3.20%), we have 7 years of data; for 2 MFIs (0.48%), we have 8 years of data; for 1 MFI (0.24%), we have 9 years of data.

3. When the rating report provides no clear information regarding a possible Christian background, the MFI is excluded from the analyses.

4. OSS measures whether operational income covers operational, financial and default costs. FSS is OSS adjusted for subsidies and other MFI-specific income statement adjustments as assessed by the rating agency.

5. Among the 65 Christian MFIs, 23 MFIs have Catholic origins, and 42 MFIs have Protestant origins. The many firm-years available in the rating reports allow for meaningful statistics with 89 firm-years for Catholic MFIs and 176 firm-years for Protestant MFIs.

6. In unreported regressions, we check whether the poorer operational efficiency in Protestant MFIs is driven by international networks Opportunity International and Vision Fund because about half of the Protestant MFIs belong to these networks. Our findings indicate that such an explanation can be rejected. The network effect is not driving the poorer efficiency found in Protestant MFIs.

References

Aghion, B.A.d., & Morduch, J. (2005). *The economics of microfinance*. London: MIT Press.

Amirkhanyan, A. A., Kim, H. J., & Lambright, K. T. (2009). Faith-based assumptions about performance - Does church affiliation matter for service quality and access? *Nonprofit and Voluntary Sector Quarterly*, 38(3), 490–521.

Bateman, M. (2010). *Why doesn't microfinance work? The destructive rise of local neo-liberalism.* London, Zed Books.

Burbank, K. (undated). *A Christian perspective on micro-enterprise loans and the payment of loan interest.* Eastern College, St. David's, PA, pp. 1–34.

Bussau, D., & Mask, R. (2003). *Christian microenterprise development: An introduction.* Oxford: Regnum Books.

Cooney, K., & Shanks, T. R. W.(2010). New approaches to old problems: Market-based strategies foe poverty alleviation. *Social Service Review*, 84(1), 29-55.

Cull, R., Demirgüc-Kunt, A., & Morduch, J. (2007). Financial performance and outreach: A global analysis of leading microbanks. *Economic Journal* 17 (517), 107–133.

Daley-Harris, S. (2009). *State of the Microcredit Summit Campaign Report 2009*. Washington, DC: MicrocreditSummit, pp. 1–76.

D'Espallier, B., Guerin, I., & Mersland, R. (2011). Women and repayment in microfinance. *World Development*, *39*(5), 758–772.

DiMaggio, P.J. & Powell, W.W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48*, 147–160.

Emmons, R. A. (1999). *The psychology of ultimate concerns: Motivation and spirituality in personality*. New York, NY: Guilford Press.

Emmons,. R.A., Cheung C., & Tehrani K. (1998). Assessing spirituality through personal goals : implications for research on religion and subjective well-being. *Social Indicators Research, 45*, 391-422.

Fogel, K., Hawk, A., & Morck, R. (2006). Institutional obstacles to entrepreneurship. In M. Casson, B. Yeong, A. Basu, & N. Wadeson (Eds.), *The Oxford handbook of entrepreneurship*. Oxford, UK: Oxford University Press.

Formicola, J. R., Segers, M. C., Weber, P. (2003). *Faith-based initiatives and the bush administration: The good, the bad and the ugly*. Lanham, MD: Rowman & Littlefield Publishers.

Gifford, P. (2009). *Christianity, politics, and public life in Kenya*. London: Hurst & Company.

Harper, M., Rao, D. S. K., & Sahu, A. K. (2008). *Development, divinity and dharma - The role of religion in development and microfinance institutions*. Warwickshire, UK: Practical Action Publishing.

Hashemi, S. (2007). Beyond good intentions: Measuring the social performance of microfinance institutions. *Focus Note 41*. CGAP, Washington. Pp. 1-12.

Hermes, N., Lensink, R., & Meesters, A. (2011). Outreach and efficiency of microfinance institutions. *World Development*39(6), 938-948.

Horne, H. O. (1947). *A history of savings banks*. London: Oxford University Press.

Hulme, D., & Mosley, P. (1996). Finance against poverty. London: Routledge.

Iannaccone, L. R. (1998). Introduction to the economics of religion. *Journal of Economic Literature*, *36*, 1465–1496.

Jegers, M. (2009). Corporate governance in nonprofit organizations: A nontechnical review of the economic literature. *Nonprofit Management & Leadership,* 20(2), 143–164.

Johnson, B. R. (2002). Objective hope: Assessing the effectiveness of faith-based organizations: A review of the literature. In *CRRUCS Report* (pp. 1–76). New York: Center for Research on Religion and Urban Civil Society.

Kaleem, A., & Ahmed, S. (2010). The Quran and poverty alleviation - A theoretical model for charity-based Islamic Microfinance Institutions (MFIs). *Nonprofit and Voluntary Sector Quarterly*, *39*, 409–428.

Karim, N., Tarazi, M., & Reille, X. (2008). Islamic microfinance: An emerging market niche. In *Focus note*. Washington, DC: CGAP.

Knox, K. J., Blankmeyer, E. C., & Stutzman, J. R. (2006). Comparative performance of quality among nonprofit nursing facilities in Texas. *Nonprofit and Voluntary Sector Quarterly, 35*, 631–667.

Kock, D.-J., Dreher, A., Nunnenkamp, P., & Thiele, R. (2009). Keeping a low profile: What determines the allocation of aid by non-governmental organizations? *World Development*, *37*, 902–918.

Landes, D. (1998). *The wealth and poverty of nations*. London: Abacus.

Mahoney, A., Pargament, K.I., Cole B., Jewell T., Magyar, G.M. & Tarakeshwar N. et al. (2005). A higher purpose: The sanctification of strivings in a community sample. *International Journal for the Psychology of Religion, 15*, 239-262.

Marshall, Katherine and Lucy Keough. 2004. *Mind, Heart, and Soul in the Fight against Poverty*. Washington D.C.: World Bank.

McCullough, M. E., & Willoughby, B. L. B. (2009). Religion, self-regulation, and self-control: Associations, explanations, and implications. *Psychological Bulletin*, *235*(1), 69–93.

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, *27*, 415–444.

Mersland, R. (2009). The cost of ownership in microfinance organizations. *World Development*, *37*(2), 469–478.

Mersland, R., Randøy, T., & Strøm, R.Ø. (2011). The Impact of International influence on microbanks' performance: A global survey. *International Business Review*, *20*(2), 163–176.

Mersland, R., & Strøm, R.Ø. (2008). Performance and trade-offs in microfinance organizations - does ownership matter? *Journal of International Development*, *20*(4), 598–612.

Mersland, R., & Strøm, R.Ø. (2010). Microfinance mission drift? *World Development*, *38*(1), 28–36.

Morduch, J. (1999). The microfinance promise. *Journal of Economic Literature*, *37*, 1569–1614.

Reille, X., Glisovic-Mezieres, J., & Berthouzoz, Y. (2009). MIV performance and prospects: Highlights from the CGAP 2009 MIV benchmark survey. In *CGAP brief*. Washington, DC: CGAP.

Rogers, E., & Bhowmik, D.K. (1970). Homophily-heterophily: Relational concepts for communication research. *The Public Opinion Quarterly*, *34(4)*, 523–538.

Rosenberg, R., Gonzalez, A., & Narain, S. (2009). The new moneylenders: Are the poor being exploited by high microcredit interest rates? In *Occasional paper* (pp. 1–28). Washington, DC: CGAP.

Supphellen, M., Haugland, S.A., & Oklevik, O. (2010). *Entrepreneurial orientation, self-efficacy, and religious attitudes in small third-world enterprises.* The Strategic Management Society Conference, Rome.

Teck, A. (1968). *Mutual savings banks and savings and loan associations: Aspects of growth*. New York: Columbia University Press.

Ter Haar, G., & Ellis, S. (2006). The role of religion in development: Towards a new relationship between the European Union and Africa. *The European Journal of Development Research*, *18*, 351–367.

Thomas, S. M., 2005. *The Global Resurgence of Religion and the Transformation of International Relations.* London: Palgrave Macmillan.

Tyndale, W. (2001). Towards sustainable development: A shift in values. *Commentary: International Movement for a Just World*, *1*, 1–4.

Weber, M. (1958). *The Protestant ethic and the spirit of capitalism*. Translated by T. Parsons. New York: Free Press.

Wooten, T. C., Coker, J. W. & Elmore R. C. (2003). Financial control in religious organizations: A status report. *Nonprofit Management and Leadership*, 13(4), 343-365.

World-Bank, (2007). *Finance for all? Policies and pitfalls in expanding access*. World Bank Policy Research Report.

World-Relief (1996). No sharks or scorpions allowed! A biblical view of interest on production loans. In *Microenterprise brief*. Baltimore, MD: World Relief.

Wrezsniewski, A., McCauley, C., Rozin P. & Schwartz, B. (1997). Jobs, careers, and callings: People's relations to their work. *Journal of Research in Personality, 31*, 21-33.

Table 1. Summary statistics for variables included in the study

	n	*Mean*	*Median*	*Stan. dev.*	*Min*	*Max*
TA (x 1000)	1585	6348	2672	13200	19	248000
Age	1605	9.26	8.00	6.74	1	79
TLP (x 1000)	1599	4276	1972	6072	3	59700
Operational costs (x 1000)	1574	892	466	1652	1	37700
Operational costs / TLP (%)	1505	0.34	0.23	0.42	0.01	1.00
Portfolio yield (%)	1515	0.39	0.34	0.23	0.02	2.00
% cost of borrowed funds	1393	0.08	0.07	0.08	0.00	0.96
PaR30 (%)	1466	0.06	0.03	0.09	0.00	0.97
Average loan	1492	728	386	1109	25.86	10000
Female clients (%)	2805	0.73	0.74	0.24	0.00	1.00
ROA	1518	0.01	0.025	0.126	-0.99	0.99
OSS	892	1.14	1.11	0.38	0.07	2.96
FSS	874	0.95	0.96	0.32	0.06	3.00
Dummy Christian	1601	0.17	0.00	0.37	0.00	1.00
Dummy regulated	1568	0.28	0.00	0.45	0.00	1.00
Dummy nonprofit (NGO/COOP)	1606	0.64	1.00	0.47	0.00	1.00
Dummy for profit (BANK/NBFI)	1606	0.33	0.00	0.47	0.00	1.00

Table 2. Univariate statistics on the differences between Christian and secular MFIs

	Mean values			*Median values*		
	Christian	Secular	t-stat	Christian	Secular	χ^2-stat
Financial performance drivers						
Portfolio yield	0.35	0.40	3.61***	0.30	0.35	13.95***
Cost of funds	0.05	0.08	4.78***	0.05	0.07	16.63***
Operational costs / TLP	0.31	0.31	0.40	0.23	0.24	1.50
PaR30	0.07	0.06	-0.14	0.03	0.03	0.11
Bottom-line financial performance						
ROA	-0.01	0.01	1.89**	0.02	0.03	2.58**
OSS	1.14	1.13	-0.23	1.12	1.11	0.03
FSS	0.91	0.96	1.56*	0.93	0.98	3.47*
Social performance						
Average loan	641	749	1.40	360	387	0.37
% female clients	0.63	0.73	4.69***	0.63	0.74	12.63***

Table 3. Social performance differences between Christian and secular MFIs (RE model)

Social perf.	*Average loan size*	*% female clients*
Christian MFIs	-119.0	-0.067***
Firm-specific controls		
Lnta	76.01**	-0.02***
Age	3.46	0.001
Dumregulation	83.80	-0.06**
Dumownership	156.98	-0.11***
Contextual controls		
Heritage	-3.38	-0.001
GDP per capita	15.93	0.00
HDI	-1417	0.29
Regional dummies	yes	yes
Time dummies	yes	yes
Model stats		
N	1354	680
Wald χ^2	194.40***	25.56***
R^2	0.16	0.34

* Note: Dumownership = 1 if an MFI is a bank or a non-bank financial institution and 0 if an MFI is an NGO or a cooperative. Unreported regressions without regional and time dummies yield similar results.

Table 4. Financial performance differences between Christian and secular MFIs (RE model)

Financial performance drivers	*Yield*	*Cost of funds*	*Costs / TLP*	*PaR30*
Christian MFIs	-0.025**	-0.026***	0.016	-0.001
Firm-specific controls				
Lnta	-0.005	0.004	-0.059***	-0.001
Age	-0.003*	0.001	-0.001	0.002*
Dumregulation	-0.074**	-0.006	-0.014	0.003
Dumownership	0.059**	-0.001	0.034	-0.004
Contextual controls				
Heritage	0.00	0.00	0.01	0.00
GDP per capita	0.00	0.00	0.00	0.00
HDI	0.62***	0.11*	0.42**	-0.01
Regional dummies	yes	yes	yes	Yes
Time dummies	yes	yes	yes	Yes
Model stats				
N	1387	1281	1377	1330
Wald χ^2	119.63***	89.09***	191.90***	79.95***
R^2	0.18	0.08	0.21	0.10

* Note: Dumownership = 1 if an MFI is a bank or a non-bank financial institution and 0 if an MFI is an NGO or a cooperative. Unreported regressions without regional and time dummies yield similar results.

Table 5. Bottom-line performance differences between Christian and secular MFIs (RE model)

Bottom-line perf.	*ROA*	*OSS*	*FSS*
Christian MFIs	-0.023***	-0.031*	-0.059*
Firm-specific controls			
Lnta	0.029***	0.099***	0.092***
Age	-0.01	-0.007	-0.006
Dumregulation	-0.013	-0.012	-0.012
Dumownership	0.003	0.042	0.051
Contextual controls			
Heritage	-0.001	-0.004	-0.006
GDP per capita	0.000	0.000	0.000
HDI	-0.083	-0.189	0.041
Regional dummies	yes	yes	yes
Time dummies	yes	yes	yes
Model stats			
N	1383	825	799
Wald χ^2	97.16***	135.05***	174.46***
R^2	0.17	0.12	0.17

* Note: Dumownership = 1 if an MFI is a bank or a non-bank financial institution and 0 if an MFI is an NGO or a cooperative. Unreported regressions without regional and time dummies yield similar results.

Table 6. Sub-samples of Protestant versus Catholic MFIs: financial performance drivers

Financial performance drivers	*Portfolio yield*		*Cost of funds*		*PaR30*		*costs/TLP*	
Catholic MFIs (yes/no)	-0.071**		-0.033***		-0.01		-0.029	
Protestant MFIs (yes/no)		0.014		-0.015**		0.006		0.058*
Firm-specific controls								
Lnta	-0.004	-0.003	0.006*	0.005	-0.006	-0.006	-0.058***	-0.057***
Age	-0.003*	-0.003*	0.00	0.00	0.002*	0.003*	-0.001	-0.001
Dumregulation	-0.071***	-0.069**	-0.005	-0.005	-0.003	-0.002	-0.016	-0.014
Dumownership	0.044*	0.043*	-0.004	-0.004	-0.003	-0.003	0.026*	0.024
Contextual controls	added	added	added	added	Added	added	added	added
Regional dummies	yes	yes	yes	yes	Yes	yes	yes	yes
Time dummies	yes	yes	yes	yes	Yes	yes	yes	yes
Model stats								
N	1317	1317	1220	1220	1261	1261	1312	1312
Wald χ^2	113***	112***	82***	65***	75***	78***	189***	187***
R^2	0.21	0.2	0.07	0.07	0.11	0.11	0.23	0.23

* Note: Dumownership = 1 if an MFI is a bank or a non-bank financial institution and 0 if an MFI is an NGO or a cooperative.

Table 7. Sub-samples of Protestant versus Catholic MFIs: social and bottom-line financial performance

Bottom-line and social perf.	*% female clients*		*Average loan*		*FSS*		*ROA*	
Catholic MFIs (yes/no)	-0.076*		-127.49		-0.017*		-0.080**	
Protestant MFIs (yes/no)		-0.036*		-126.67		-0.067**		-0.087**
Firm-specific controls								
Lnta	-0.033***	-0.032***	76.28**	75.27**	0.092***	0.091***	0.065***	0.064***
Age	0.006*	0.006*	1.88	2.26	-0.006*	-0.006*	-0.004**	-0.004**
Dumregulation	-0.039*	-0.038*	82.96	81.01	0.038	0.037	-0.011	-0.013
Dumownership	-0.102***	-0.097***	181.98	186.32	0.017	0.021	-0.017	-0.014
Contextual controls	added	added	added	added	added	added	added	added
Regional dummies	yes	yes	yes	yes	yes	yes	yes	yes
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes
Model stats								
N	620	620	1294	1294	770	770	1238	1238
Wald χ^2	22.93***	23.60***	174.42***	180.21***	154.64***	163.29***	105.16***	102.41***
R^2	0.34	0.34	0.17	0.17	0.19	0.19	0.17	0.17

* Note: Dumownership = 1 if an MFI is a bank or a non-bank financial institution and 0 if an MFI is an NGO or a cooperative.